**Results from GE Muse to Optum/CAC Requirements**

**Version 1.1**

**Prepared By: Tiffany Bohall**

**Date: 5/23/2018**

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# **Document Control**

## Resources: (include Project Team Members, Liaisons, Vendor Contacts, etc.)

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## Project Distribution List

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 1/15/2018 | Tiffany Bohall | Originally Created |
| V1.1 | 5/23/18 | Tiffany Bohall | Updated filtering criteria |
|  |  |  |  |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The purpose of this interface requirements document is to define the HL7 requirements from GE Muse (for EKG’s only) to Optum CAC. This document does not include GE Muse nuclear stress results as there is no interface in place currently from GE Muse to Optum.

## 1.2 Project Scope

The scope of the integration that is defined in this Integration Development Build Book (IDBB), particularly this IDBB defines only part of the system. There are multiple other interfaces that are documented elsewhere, including but not limited to ADT from Soarian, results, MDOC and labs from Cerner, as well as BAR transactions, and Xcelera (Cardiology) and Regiology results.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

CAC = Computer Assisted Coding

1.3.2 Glossary –N/A

List the terms that require definition with respect to Cloverleaf and the product whose requirements are defined in this document. The definitions are specific to this document and may not be identical to the definitions of these terms in common use.

## 1.4 Document References

Located on the Enterprise Integration Team’s sharepoint site, within the CAC OPTUM (Computer Assisted Coding) folder there is a whole slew of documentation with regards to integration, data flow and specifications for the various interfaces in place between BayCare and Optum/CAC.

# 2. Diagram –N/A

Provide a solution diagram that depicts the integration of components specified in this IDBB. This diagram must include the data flow for the interfaces (source and target).



# 3. Requirements

## 3.1 Functional Requirements

Provide detail for the below functional requirements. The message transformation requirements for the components defined in this specification should be specified in section 4.2 of this document.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2017.1.15.0 | BOI locations | tpsAdvHL7Filter in place which suppresses all results where MSH.5 =BOI |
| FR.2017.1.15.1 | BMG locations | tpsAdvHL7Filter in place which suppresses all results where PID.18.4 =BMGFN |
| FR.2017.1.15.2 | No CPI suppression | tpsAdvHL7Filter in place which suppresses all results where PID.3.0 is null |
| FR.2017.1.15.3 | No FIN suppression | tpsAdvHL7Filter in place which suppresses all results where PID.3.0 is null |

## 3.2 Non-Functional Requirements –N/A

Provide concise detail for the below non-functional requirements. This would include external table ownership, hours of support, etc. The below requirements must be evaluated for every project.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| NFR.20XX.1.0 | Click here to enter text. | Click here to enter text. |

## 3.3 Messaging Protocols

Below are listed the details for the messaging protocols that will be leveraged for this integration. This includes: TCP/IP, FTP, Web Services, etc.

### 3.3.1 Inbound to the BayCare Cloverleaf

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

### 3.3.2 Outbound to the BayCare Cloverleaf –N/A

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

### 3.3.3 Inbound to the Vendor –N/A

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

### 3.3.4 Outbound to the Vendor

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

# 4. HL7 Messaging

## 4.1 Messaging Format

HL7 2.3 cerner\_emr ORU\_R01

### 4.1.1 Segments

The segments utilized for this interface are:

MSH

PID

[ORC]

OBR

[OBX]

*Message Construction Notes:*

*[Square Brackets] – Optional*

*{Curly Brackets} – Repeatable*

*MSH – Message Header*

*PID – Patient ID segment*

*ORC – Common Order segment*

*OBR – Observation Request segment*

*OBX – Observation/result segment*

*[{ – Start of optional, repeatable group*

*}] – End of optional, repeatable group*

### 4.1*.*2 Messaging Event Types

Below are the messages types necessary for this integration

|  |  |
| --- | --- |
| **Event Type** | **Description** |
| ORU\_R01 | Result |
|  |  |
|  |  |

### 4.1*.*3 Cloverleaf Configuration Files

Cloverleaf Configuration Files: muse\_optum\_oru.xlt

### 4.1.4 Cloverleaf Site Location

Cloverleaf site location: optum\_16.

## 

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | **Notes** |
| --- | --- | --- | --- |
| MSH Message Header | Varies | Y | Pathcopy entire segment |
| Encoding Characters | MSH.2 |  | Hard code “^~\&” |
| Sending Application | MSH.3 |  | Hard code “MUSE” |
| Sending Facility | MSH.4 |  | Copy and send to @fac variable |
| Receiving Application | MSH.5 |  | Hard code “ACTUS” |
| Receiving Facility | MSH.6 |  | Copy from MSH.4 |
| Version ID | MSH.12 |  | Hard code “2.3” |
| Patient ID: ID | PID.3.0 |  | Copy |
| Patient ID: ID type code | PID.3.4 |  | Hard code “CPI” |
| Patient Name | PID.5 |  | Pathcopy entire field |
| Patient Account Number: ID | PID.18.0 |  | Copy |
| Patient Account Number: assigning authority | PID.18.3 |  | Hard code “@fac” variable and concatenate with “FIN” oubound |
| Order Control | ORC.1 |  | Hard code “RE” |
| Placer order Number | ORC.2 |  | Copy from OBR.2 |
| Filler Order Number | ORC.3 |  | Copy from OBR.2 |
| Set ID | OBR.1 |  | Copy |
| Placer order Number | OBR.2 |  | Copy |
| Filler Order Number | OBR.3 |  | Copy from OBR.2 |
| Universal Service Identifier: ID | OBR.4.0 |  | Hard code “MUSEEKG” |
| Universal Service Identifier: text | OBR.4.1 |  | Copy |
| Observation Date/Time | OBR.7 |  | Copy |
| Result Rpt/StatusChng –Date/Time | OBR.22 |  | Copy |
| Diagnostic Serv Sect ID | OBR.24 |  | Hard code “MDOC” |
| Result Status | OBR.25 |  | Copy |
|  | N/A | Y | Hard coding “0” to $%g2 and “1” to @TXsetid |
| Observation/result segment | OBX |  | Iterate through group instance 1 and copy OBX.1, copy OBX.1 to OBX.4, hard code “TX” in OBX.2, hard code “MUSEEKG” to OBX.3.0, copy OBX.3.1, copy OBX.5 and send the contents of OBX.5 to @flag variable with TCL proc that sets temporary string range, if string = ‘Confirmed’ or ‘ Reconfirm’, set outvals list to “Y”, else set outvals list to “N”.  If @flag variable = “Y”, hard code “Electronically Signed By” to OBX.3.1.  Copy OBX.6, copy OBX.11, math add =1 to $%g2 and math add =1 to @TXsetid. Concatenate OBX.3.2 to beginning of OBC.5 and OBX.6 to end of OBX.5. Copy OBC.5.2 to @PDF variable. If @PDF = “PDF”, null OBX group instance. |

## 4.3 Sample Message

**INBOUND:**

MSH|^~\&|MEI MUSE|BAH|HIS SYSTEM|BAH|20180314135643||ORU^R01|20180314135643|P|2.2

PID|1|810017343|810017343||EVENTONE^SEVEN||19420811|M||3||||||||6000037097^^^^BCFN

PV1|1|I|BABAH1^14^01||||MS006599^Solomon^Kenneth||MS063259^Hgtel^Lrhiz||||||||||6000037097|||||||||||||||||||||||||20180312105500

OBR|1|13359010221||EKG^EKG 12 Lead^^^12 Lead ECG||20180314135643|20180314042641||||||User Defined|20180314135640||MS006599^Solomon^Kenneth||||1473756||20180314135643|||F||||||SHORTNESS OF BREATH|MS063259, 1881699718^Baker^Robin^^^^^^^^55891||^ER^NBAY^^^^^^^^1017|MS063259, 1881699718^Baker^Robin^Robin^^^^^^^55891|20180312152800

OBX|1|ST|93000.2^Ventricular Rate||93|BPM|||||F

OBX|2|ST|93000.3^Atrial Rate||93|BPM|||||F

OBX|3|ST|93000.4^P-R Interval||178|ms|||||F

OBX|4|ST|93000.5^QRS Duration||90|ms|||||F

OBX|5|ST|93000.6^Q-T Interval||386|ms|||||F

OBX|6|ST|93000.7^QTC Calculation(Bazett)||479|ms|||||F

OBX|7|ST|CPT4^P Axis||53|degrees|||||F

OBX|8|ST|CPT4^R Axis||-8|degrees|||||F

OBX|9|ST|CPT4^T Axis||170|degrees|||||F

OBX|10|TX|CPT4^Diagnosis||Normal sinus rhythm||||||F

OBX|11|TX|CPT4^Diagnosis||Possible Left atrial enlargement||||||F

OBX|12|TX|CPT4^Diagnosis||LVH||||||F

OBX|13|TX|CPT4^Diagnosis||T wave abnormality, consider lateral ischemia||||||F

OBX|14|TX|CPT4^Diagnosis||Prolonged QT interval or tu fusion, consider myocardial disease, electrolyte imbalance, or drug effects||||||F

OBX|15|TX|CPT4^Diagnosis||Abnormal ECG||||||F

OBX|16|TX|CPT4^Diagnosis||When compared with ECG of 17-JAN-2014 00:59,||||||F

OBX|17|TX|CPT4^Diagnosis||No significant change was found||||||F

OBX|18|TX|CPT4^Diagnosis||Confirmed by Baker, Robin (55891) on 3/14/2018 1:56:40 PM||||||F

ZPD|1|PDF|96738^79666^begin 644 WAV.DAT\X0D\\X0A\M)5!$1BTQ+C`\*)>+CS]/H"B`@-2`P(\T\]B:CP\E\+U1Y<\T\4@+T-\*\*\*removed 10+ pages of PDF encoding characters\*\*\*

**OUTBOUND:**

MSH|^~\&|MUSE|BAH|ACTUS|BAH|20180314135643||ORU^R01|20180314135643|P|2.3

PID|||810017343^^^^CPI||EVENTONE^SEVEN|||||||||||||6000037097^^^BAH FIN

ORC|RE|13359010221|13359010221

OBR|1|13359010221|13359010221|MUSEEKG^EKG 12 Lead|||20180314042641|||||||||||||||20180314135643||MDOC|F|||||||MS063259, 1881699718&Baker&Robin

OBX|1|TX|MUSEEKG^Ventricular Rate|1|Ventricular Rate 93 BPM|BPM|||||F

OBX|2|TX|MUSEEKG^Atrial Rate|2|Atrial Rate 93 BPM|BPM|||||F

OBX|3|TX|MUSEEKG^P-R Interval|3|P-R Interval 178 ms|ms|||||F

OBX|4|TX|MUSEEKG^QRS Duration|4|QRS Duration 90 ms|ms|||||F

OBX|5|TX|MUSEEKG^Q-T Interval|5|Q-T Interval 386 ms|ms|||||F

OBX|6|TX|MUSEEKG^QTC Calculation(Bazett)|6|QTC Calculation(Bazett) 479 ms|ms|||||F

OBX|7|TX|MUSEEKG^P Axis|7|P Axis 53 degrees|degrees|||||F

OBX|8|TX|MUSEEKG^R Axis|8|R Axis -8 degrees|degrees|||||F

OBX|9|TX|MUSEEKG^T Axis|9|T Axis 170 degrees|degrees|||||F

OBX|10|TX|MUSEEKG^Diagnosis|10|Diagnosis Normal sinus rhythm ||||||F

OBX|11|TX|MUSEEKG^Diagnosis|11|Diagnosis Possible Left atrial enlargement ||||||F

OBX|12|TX|MUSEEKG^Diagnosis|12|Diagnosis LVH ||||||F

OBX|13|TX|MUSEEKG^Diagnosis|13|Diagnosis T wave abnormality, consider lateral ischemia ||||||F

OBX|14|TX|MUSEEKG^Diagnosis|14|Diagnosis Prolonged QT interval or tu fusion, consider myocardial disease, electrolyte imbalance, or drug effects ||||||F

OBX|15|TX|MUSEEKG^Diagnosis|15|Diagnosis Abnormal ECG ||||||F

OBX|16|TX|MUSEEKG^Diagnosis|16|Diagnosis When compared with ECG of 17-JAN-2014 00:59, ||||||F

OBX|17|TX|MUSEEKG^Diagnosis|17|Diagnosis No significant change was found ||||||F

OBX|18|TX|MUSEEKG^Electronically Signed By|18|Diagnosis Confirmed by Baker, Robin (55891) on 3/14/2018 1:56:40 PM ||||||F

# 5. Alerts

Are you going to need alerting on this connection?

|  |  |
| --- | --- |
| Yes |  |
| No |  |

If the answer is yes, please complete the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Site Name** | **Hours of Support** | **Distribution Group** | **Comments** |
|  |  |  |  |
| Optum\_16\_p | Monday through Friday,  07:00-17:00 | Integration Team, Tammy Urchick, Janet Rushkowski, Jacqui Scott, Andrew Bowers and Andrea Milton | If transations are greater than 500 for more than 10 minutes, initiate alert and repeat every hour until issue is resolved. |

# Appendix A: Risks and Concerns –N/A

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** |  |  | | |  |  |  |  |
| **Number** | **Risk / Concern** | **Comment** | **Mitigation** | | |  |  |  |
| RC.2013.1.0 |  |  | |  | |  |  |  |

# Appendix B: Issues List –N/A

This is a dynamic list of the open issues related to the IDBB that remain to be solved, including but not limited to TBDs, pending decisions, information needed, conflict awaiting resolution, and the like.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** |  |  | | |  |  |  |  |
| **Number** | **Issue** | **Comment** | **Fix** | | |  |  |  |
| I.2013.1.0 |  |  | |  | |  |  |  |

* End of document